# Emergency Back-Up Plans

## Status Briefing to the EOSDIS Review Group

## February 3-5, 1998

# Emergency Back-Up Plans - Overview

- **AM-1**
  - Support minimal critical requirements, independently of ECS, for the period of L through L + 6 months
  - All instrument teams except MOPITT mitigate risk of ECS not being operationally ready at launch
  - MOPITT's plan supports product generation at PI's site through L + 6 months even if ECS is ready
    - » 11/97 decision based on cost neutrality and simplification of interface activities for instrument team
- **Landsat-7**
  - Maintain Level 0R data generated by Landsat-7 Processing System
  - Provide limited operational distribution of data sets
  - Support ETM+ calibration and algorithm validation
  - Provide Level 0R to Science Office, Image Assessment System, and to Level 1 Product Generation System
  - Provide capabilty for L1 scene product ordering, billing and accounting, and distribution to users
- **SAGE-III**
  - started with goals similar to AM-1/Landsat-7 plans, but decided to have PI responsible for processing for the life of the mission
    - » Decision based on cost neutrality and simplification of interface activities for instrument team
    - » Early prototype of Adaptive Approach

# Emergency Back-Up Plans - Overview

- Level Zero Active Archive, Retrieval and Distribution System (LZAARDS) is a separately funded back-up in EDOS
- All instruments except MOPITT and SAGE-III produce significantly reduced volumes of products under Emergency Plan; MOPITT and SAGE-III, with relatively small resource requirements produce products at "baseline" levels
- All teams funded starting March 1997
  - support the minimal needs of the instrument teams in early calibration and validation of instruments and processing algorithms
  - distribution to the broader community limited to what can be accommodated with the existing DAAC capabilities (however, Landsat-7 Emergency Plan *will* support current operational users)
  - PIs have made teaming arrangements with the DAACs that they normally work with (in the context of ECS)
- "Light Touch" Management from ESDIS Project
  - Ensuring interfaces are met with no impact on ECS
  - Draft interface implementation document prepared based on requirements expressed in ITs' emergency plan proposals; sent for review by the ITs
  - Interfaces will be satisfied with minimal, non-ECS, effort
- Decision on priority between Emergency Back-Up Systems and ECS to support launch to be made in early February 1998 (following the ERG meeting)

# Emergency Back-Up Plans - LZAARDS

- Development by ESDIS Project through EDOS contractor (TRW)
- Capability to archive and distribute L0 and Flight Dynamics Facility (FDF) data to SCFs
- Detailed Design Review held January 20, 1998
  - Concept and design for all subsystems have been completed
- All hardware has been installed or ordered
- LZAARDS delivery scheduled for May 30, 1998
- Opportunities to test interfaces in late April 1998

# Emergency Back-Up Plans - ASTER

- Joint effort between JPL's ASTER Science Team & EDC DAAC
  - EDC DAAC
    - » Receive and archive full set of L1 data from Japan
    - » Deliver to ASTER SCF at JPL up to 10 L1A and L1B granules per week
  - ASTER SCF
    - » Generate average of four Level 2 products per week (0.1 to 0.2 % of maximum)
- Requirements have been agreed to between JPL & EDC
- Hardware in place at both EDC and JPL
- Design review held December 3, 1997
- Staff has been hired; development started in January 1998
  - Design progressing in areas of
    - » database
    - » user screens
    - » ingest
    - » product output
    - » metadata processing
    - » Level 1 and 2 product ordering
- On schedule

# Emergency Back-Up Plans - CERES

- Joint effort between LaRC's CERES Science Team and LaRC DAAC
- TRMM-ready system (LaTIS) is to be extended for AM-1
- Hardware augmentation done; software working
- Proposal in hand to process CERES AM-1 data on LaTIS for the life of AM-1
  - Clarification telecons and meetings held
    - » Discussed costs
    - » Explored options for user access
    - » Recommendation to 170 is imminent

# Emergency Back-Up Plans - MISR

- **Joint effort between JPL's MISR Science Team & LaRC DAAC**
  - LaRC DAAC
    - » Receive and archive full set of L0 data from GSFC
    - » Deliver data on request to MISR SCF at JPL
    - » Archive and distribute SCF-generated products
  - MISR SCF
    - » Generate up to 8 swaths through Level 1B1
    - » Generate up to 2 swaths per week through Level 2, corresponding monthly or bimonthly Level 3 for a limited area of the Earth
    - » ( ~5% of the ECS production volume)
- **Hardware in place**
- **Design in progress in several areas**
  - Ingest and preprocessing of input datasets (DAO, NSIDC, L0 MISR, FDF)
  - Running PGEs at SCF - some trial runs have been made
  - Data repositories/hierarchical storage system at SCF
  - Science scenarios and operations planning
  - Archiving and cataloging data at the DAAC
- **Somewhat behind in achieving proposed EBS capability by April/May target date**
  - Ingest, product generation and distribution at SCF by April/May
  - Use of DAAC for archiving and distribution by launch (important to achieve necessary throughput)

# Emergency Back-Up Plans - MODIS

- Development mainly by MODIS Science Data Support Team (SDST)
  - Receive L0 data from LZAARDS
  - Process to L1A and archive
  - Generate all at-launch products in sufficient quantities to enable MODIS Science team's testing, debugging and validation of science algorithms (Coverage Goal: 100% of Level 1 and 25% of L2 and above; Actuals: TBD after system testing)
  - Support browsing and ordering
  - Distribute data to MODIS science team members and other authorized users
  - Provide sample products to DAACs (EDC, GSFC, NSIDC) for broader distribution
- Hardware in place
- Production system based on SeaWiFS's system in place and undergoing testing
  - Running the "Day in the Life" test and have processed Level 1, Level 2 and Level 2g products
  - System runs unattended without problems
  - Lower than expected performance due to limited disk space; problem will be resolved on 2/2/98 when Silicon Graphics installs new firmware for the RAID arrays

# Emergency Back-Up Plans - MOPITT

- Support product generation at SCF through L + 6 months (even if ECS is ready)
- Joint effort between NCAR's MOPITT Science Team & LaRC DAAC
  - LaRC DAAC
    - » Receive and archive full set of L0 data from GSFC
    - » Deliver data on request to MOPITT SCF at NCAR
    - » Archive and distribute SCF-generated products
  - MOPITT SCF
    - » Generate planned "ramped-up baseline" quantities of Level-1 and Level-2 products
- COTS software and most hardware in place
  - All hardware acquisitions at SCF have been completed except for procurement of 2 additional CPUs for Origin 2000 server
  - SYBASE data base management system software has been procured and installed
- Staff in place as planned
- Top level design work has been completed; implementation of data catalog system and data base administration tools in progress
- Draft Inter project Agreement (IPA) between NCAR and the LaRC DAAC has been agreed to by the US MOPITT PI and DAAC management
- 2-4 weeks behind proposed schedule for development of ops interface
  - No impact on other SDP development or early post launch activities which are of necessity carried out with manual setup.

# Emergency Back-up Plans - Landsat 7 DAAC Emergency System (DES)

- Being developed by ESDIS and Landsat -7 Projects through Landsat Processing System contractor (CSC)
- Archives Landsat 7 L0R data sets from LPS and provides limited distribution of L0R data to Image Assessment System and Level 1 Product Generation System
- CDR successfully completed on Nov 6, 1997
- All hardware received, software implementation progressing
- Development being closely coordinated with EDC DAAC Operations and Landsat 7 Science office
- Release 1(HW and SW) to be operational at EDC DAAC by May 1, 1998
- Release 2 (SW) to be operational by July 1, 1998

# Emergency Back-up Plans - Landsat 7 Level 1 Product Distribution Systems (LPDS)

- Development initiated in January, 1998 using DES contractor.
- Provides
  - L1 product ordering (web based user search and browse interface)
  - L1 product billing and accounting
  - L1 product distribution to users (100 scenes/day; CD ROM, 8mm tape, and/or electronic file transfer)
- Stand-alone, not contingent upon DES deployment
- definition, design, development, and integration and test period is from January 1998 to May 1999
  - SRR/SDR in late March 1998, followed by a CDR in 3 months
- Release 1 deployed and integrated at EDC DAAC from December 1998 to February 1999 - provides initial capability
- Release 2 will be integrated at EDC in April 1999 and provides full system capability

# Emergency Back-Up Plans - SAGE III

- Support product generation at SCF for life of mission (Started as Emergency Back-up Plan)
- Joint effort between LaRC's SAGE III Science Team & LaRC DAAC
  - LaRC DAAC
    - » Receive and archive full set of L0 data from SAGE III Mission Operations Center
    - » Deliver data on request to SAGE III SCF at LaRC
    - » Archive and distribute SCF-generated products
  - SAGE III SCF
    - » Generate planned "baseline" quantities of Level-1B and Level-2 products
- Software development is on schedule for end-to-end test in April 1998
- launch date slipped to between May and July of 1999. Evaluating impact on software development.